

## CLAIMS

We claim:

- 1     1. A method for monitoring a computer application,  
2     comprising:  
3  
4         adjustably tuning performance evaluation bias between  
5         processor and memory consumption; and  
  
6         responsive to said bias, monitoring performance of said  
7         computer application with respect to transaction time  
8         parameters.
- 1     2. The method of claim 1, further comprising:  
  
2         receiving from a user a first tuning parameter for  
3         allocating memory for said monitoring performance.
- 1     3. The method of claim 1, further comprising:  
  
2         receiving from a user a first tuning parameter for  
3         allocating memory for said monitoring performance and a

4 second tuning parameter for specifying time out for in-  
5 flight units of work.

1 4. The method of claim 2, further comprising:

2 initializing said memory with an in-flight transactions  
3 vector table for anchoring synonym chains of in-flight  
4 transaction cells;

5 accumulating time statistics for in-flight transactions  
6 in said in-flight transaction cells;

7 initializing said memory with a completed transactions  
8 table for storing time statistics for completed  
9 transactions;

10 receiving from said computer application a transaction  
11 log record for a unit of work;

12 hashing said first transaction log record to select  
13 from said vector table an anchor to an in-flight  
14 transaction cells chain corresponding to said unit of  
15 work;

16        searching said in-flight transaction cells chain for  
17        said unit of work;

18        responsive to finding said unit of work in said in-  
19        flight transaction cells chain, capturing to said in-  
20        flight transaction cell timing statistics from said  
21        transaction log record;

22        responsive to not finding said unit of work in said in-  
23        flight transaction cells chain, chaining a new in-  
24        flight transaction cell to said chain and capturing to  
25        said new in-flight transaction cell timing statistics  
26        from said transaction log record; and

27        determining if said transaction log record completes a  
28        transaction and, if so, updating said completed  
29        transactions table with timing statistics for said  
30        transaction and removing said in-flight transaction  
31        cell from said in-flight transaction cells chain.

1        5.    The method of claim 3, further comprising

2        initializing said memory with an in-flight transactions  
3        vector table for anchoring synonym chains of in-flight

4 transaction cells;

5 accumulating time statistics for in-flight transactions  
6 in said in-flight transaction cells;

7 initializing said memory with a completed transactions  
8 table for storing time statistics for completed  
9 transactions;

10 receiving from said computer application a transaction  
11 log record for a unit of work;

12 hashing said first transaction log record to select  
13 from said vector table an anchor to an in-flight  
14 transaction cells chain corresponding to said unit of  
15 work;

16 searching said in-flight transaction cells chain for  
17 said unit of work;

18 responsive to finding said unit of work in said in-  
19 flight transaction cells chain, capturing to said in-  
20 flight transaction cell timing statistics from said  
21 transaction log record;

22 responsive to not finding said unit of work in said in-  
23 flight transaction cells chain, chaining a new in-  
24 flight transaction cell to said chain and capturing to  
25 said new in-flight transaction cell timing statistics  
26 from said transaction log record;

27 determining if said transaction log record completes a  
28 transaction and, if so, updating said completed  
29 transactions table with timing statistics for said  
30 transaction and removing said in-flight transaction  
31 cell from said in-flight transaction cells chain; and

32 determining responsive to said second tuning parameter  
33 if a selected unit of work being accumulated in a  
34 selected in-flight transaction cell has timed out, and  
35 if so removing from said selected in-flight transaction  
36 cell from said in-flight transaction cell chain and  
37 selectively updating said completed transactions table  
38 with timing statistics for said selected unit of work.

1 6. A system for monitoring a computer application,  
2 comprising:

3 a first user actuated tuning knob for allocating space

4 in memory for performance monitoring;

5 a second user actuated tuning knob for a specifying

6 time out value for in-flight units of work; and

7 a transaction monitor responsive to said first and

8 second user actuated tuning knobs for accumulating in

9 synonym chain cells in said space timing statistics for

10 a plurality of said in-flight units of work.

1 7. The system of claim 6, further comprising:

2 said memory including an in-flight transactions vector

3 table for anchoring synonym chains of in-flight

4 transaction cells;

5 said in-flight transaction cells for accumulating time

6 statistics for in-flight transactions;

7 said memory including a completed transactions table

8 for storing time statistics for completed transactions;

9 a monitor for receiving from said computer application

10 a transaction log record for a unit of work;

11       said monitor hashing said first transaction log record  
12       to select from said vector table an anchor to an in-  
13       flight transaction cells chain corresponding to said  
14       unit of work;

15       said monitor for searching said in-flight transaction  
16       cells chain for said unit of work;

17       said monitor further responsive to finding said unit of  
18       work in said in-flight transaction cells chain for  
19       capturing to said in-flight transaction cell timing  
20       statistics from said transaction log record;

21       said monitor further responsive to not finding said  
22       unit of work in said in-flight transaction cells chain  
23       for chaining a new in-flight transaction cell to said  
24       chain and capturing to said new in-flight transaction  
25       cell timing statistics from said transaction log  
26       record;

27       said monitor further for determining if said  
28       transaction log record completes a transaction and, if  
29       so, updating said completed transactions table with  
30       timing statistics for said transaction and removing

31           said in-flight transaction cell from said in-flight  
32           transaction cells chain; and

33           said monitor further for determining responsive to said  
34           second tuning knob if a selected unit of work being  
35           accumulated in a selected in-flight transaction cell  
36           has timed out, and if so removing from said selected  
37           in-flight transaction cell from said in-flight  
38           transaction cell chain and selectively updating said  
39           completed transactions table with timing statistics for  
40           said selected unit of work.

1       8.    A program storage device readable by a machine,  
2       tangibly embodying a program of instructions executable by a  
3       machine to perform method steps for monitoring a computer  
4       application, said method comprising:

5           adjustably tuning performance evaluation bias between  
6           processor and memory consumption; and

7           responsive to said bias, monitoring performance of said  
8           computer application with respect to transaction time  
9           parameters.



1       9.    The program storage device of claim 8, said method  
2       further comprising:

3           receiving from a user a first tuning parameter for  
4           allocating memory for said monitoring performance.

1       10. The program storage device of claim 8, said method  
2       further comprising:

3           receiving from a user a first tuning parameter for  
4           allocating memory for said monitoring performance and a  
5           second tuning parameter for specifying time out for in-  
6           flight units of work.

1       11. The program storage device of claim 9, said method  
2       further comprising:

3           initializing said memory with an in-flight transactions  
4           vector table for anchoring synonym chains of in-flight  
5           transaction cells;

6           accumulating time statistics for in-flight transactions  
7           in said in-flight transaction cells;

8           initializing said memory with a completed transactions  
9           table for storing time statistics for completed  
10          transactions;  
  
11          receiving from said computer application a transaction  
12          log record for a unit of work;  
  
13          hashing said first transaction log record to select  
14          from said vector table an anchor to an in-flight  
15          transaction cells chain corresponding to said unit of  
16          work;  
  
17          searching said in-flight transaction cells chain for  
18          said unit of work;  
  
19          responsive to finding said unit of work in said in-  
20          flight transaction cells chain, capturing to said in-  
21          flight transaction cell timing statistics from said  
22          transaction log record;  
  
23          responsive to not finding said unit of work in said in-  
24          flight transaction cells chain, chaining a new in-  
25          flight transaction cell to said chain and capturing to  
26          said new in-flight transaction cell timing statistics

27           from said transaction log record; and

28           determining if said transaction log record completes a  
29           transaction and, if so, updating said completed  
30           transactions table with timing statistics for said  
31           transaction and removing said in-flight transaction  
32           cell from said in-flight transaction cells chain.

1       12.   The program storage device of claim 10, said method  
2       further comprising

3           initializing said memory with an in-flight transactions  
4           vector table for anchoring synonym chains of in-flight  
5           transaction cells;

6           accumulating time statistics for in-flight transactions  
7           in said in-flight transaction cells;

8           initializing said memory with a completed transactions  
9           table for storing time statistics for completed  
10          transactions;

11          receiving from said computer application a transaction  
12          log record for a unit of work;

13           hashing said first transaction log record to select  
14           from said vector table an anchor to an in-flight  
15           transaction cells chain corresponding to said unit of  
16           work;  
  
17           searching said in-flight transaction cells chain for  
18           said unit of work;  
  
19           responsive to finding said unit of work in said in-  
20           flight transaction cells chain, capturing to said in-  
21           flight transaction cell timing statistics from said  
22           transaction log record;  
  
23           responsive to not finding said unit of work in said in-  
24           flight transaction cells chain, chaining a new in-  
25           flight transaction cell to said chain and capturing to  
26           said new in-flight transaction cell timing statistics  
27           from said transaction log record;  
  
28           determining if said transaction log record completes a  
29           transaction and, if so, updating said completed  
30           transactions table with timing statistics for said  
31           transaction and removing said in-flight transaction  
32           cell from said in-flight transaction cells chain; and

33 determining responsive to said second tuning parameter  
34 if a selected unit of work being accumulated in a  
35 selected in-flight transaction cell has timed out, and  
36 if so removing from said selected in-flight transaction  
37 cell from said in-flight transaction cell chain and  
38 selectively updating said completed transactions table  
39 with timing statistics for said selected unit of work.

1 13. A computer program product for monitoring a computer  
2 application according to the method comprising:

3 adjustably tuning performance evaluation bias between  
4 processor and memory consumption; and

5 responsive to said bias, monitoring performance of said  
6 computer application with respect to transaction time  
7 parameters.